

AUTHOR:

Philip Amaral, *European Cyclists' Federation*

CONTRIBUTORS:

Jill Warren, *European Cyclists' Federation*

Isabella Burczak and Ben Barrett, *Union Cycliste Internationale (UCI)*

Lina Quiñones, *Despacio*

Sam Johnson, *World Bank*



Cycling



SLOCAT Partnership on Sustainable,
Low Carbon Transport

Transport, Climate and Sustainability
Global Status Report - 3rd edition

Key findings



Demand trends



- There are more than 1 billion bicycles in the world, and 42% of households worldwide own at least one bicycle, according to a 2015 study.
- The COVID-19 pandemic greatly influenced cycling trends, catalysing growth in both the number of people who cycle and sales of bicycles.
- The global bicycle market grew 14% between 2021 and 2022, from USD 38.4 billion to USD 43.8 billion.
- Global sales of electric bikes (e-bikes, including electric-assisted and electric moped bikes) have boomed since the start of the pandemic, in parallel to the growth in cycling.
- Bike share systems expanded during the pandemic and remained among the most resilient modes of shared mobility, rebounding after the first year of the pandemic.
- The share of cycling among transport modes has mostly remained the same across countries and cities worldwide in recent years.
- Analysis of distance-based ratios of cycling in selected countries and cities revealed that in the Netherlands, where the cycling modal share is very high, most trip distances are two kilometres or less, reflecting the density of Dutch cities and of urban cycling networks. Overall, most cycling across major world cities involves trips of five kilometres or less.
- People cycle more for trips between work and home than for other purposes. In urban areas, cycling to work is 40% more common on average than cycling for a non-work trip, with this share rising to around 60% in larger cities.
- Researchers have found mixed links between cycling and levels of education and income. The link between cycling levels and the cost of buying a bicycle is not clear, with some cyclists motivated by the affordability of cycling and others not.
- A large gender gap in cycling exists in cities across the world, with women and girls cycling much less than men for a variety of reasons, including lack of consistent access to bicycles, cultural and/or religious acceptance reasons, and lack of safe cycling knowledge or infrastructure.
- Cities that have the highest shares of cycling are also those that have a medium or high representation of women who cycle and a healthy mix of age demographics.
- Every year, an estimated 41,000 cyclists die in road traffic-related incidents worldwide, representing 3% of global road traffic deaths in 2019. A quarter of the global cyclist deaths occur in Africa. Bicycle deaths in the United States rose 5% in 2021.

Emission trends



- Cycling can lead to dramatic reductions in greenhouse gas emissions from transport. People who cycle daily emit an estimated 84% fewer carbon emissions from their daily travel than those who do not. Studies report that replacing a daily car journey with an e-bike can save an average of 249 grams of carbon dioxide (CO₂) for every kilometre travelled.
- E-bikes have the capability to reduce per capita CO₂ emissions, especially in rural areas where people typically travel longer distances and are more car dependent.
- Cargo bikes are increasingly recognised globally as a more climate-friendly and economical substitute for delivery vans, for both small and large delivery companies.

Policy developments



- Leading barriers to cycling include being too close to car traffic, a lack of quality infrastructure, perceptions of poor physical fitness, and negative community perceptions of cyclists. Globally, a key enabler for a high cycling share is the presence of safe infrastructure.
- Countries that have implemented national cycling promotion strategies include Finland, Germany, Japan and the Netherlands.
- Many cities in Asia, Europe, Latin America and the Caribbean, and North America expanded their cycling networks during the COVID-19 pandemic by adding new lanes and tracks as well as pop-up bicycle infrastructure, in response to the increased demand for cycling. More than 2,500 kilometres of temporary cycling infrastructure was added in Europe over this period, much of which is now permanent.
- In recent years, cycling policies have emerged as key measures for climate change adaptation and mitigation. Since 2018, when the United Nations declared June 3 as World Bicycle Day, several important developments have promoted cycling at the global and regional levels.
- As of March 2023, 31 (or 22%) of countries' second-generation Nationally Determined Contributions (NDCs) towards reducing emissions under the Paris Agreement covered cycling or active mobility.





Overview



Much has changed for cycling in recent years. The COVID-19 pandemic was a primary catalyst for this change, as cities around the world took advantage of the quieter streets during pandemic-related lockdowns to implement temporary cycle lanes and tracks that enabled people to exercise outdoors while maintaining social distancing. In many places, this led to expansions in dozens and even hundreds of kilometres of new cycling routes. Bicycle sales have increased sharply since 2020, especially sales of electric bikes (e-bikes), although mainly in cities in high-income countries.¹

The expansion of bike infrastructure and the implementation of pro-cycling policies supports the increase in demand. However, the vast majority of roads worldwide do not provide adequate quality levels for cyclists, as every year an estimated 41,000 cyclists die in road traffic-related crashes worldwide (3% of global road traffic deaths in 2019).

Governments and decision making bodies have adopted policies and plans to further promote cycling; for example, in February 2023 the European Parliament adopted a resolution calling for a cycling strategy for the European Union (EU).² The increased interest in cycling has promoted greater research on its environmental and climate benefits, including studies showing the enormous potential to save carbon dioxide (CO₂) emissions, especially in cities where many people's daily journeys are five kilometres or less.³

Demand trends



There are more than 1 billion bicycles in the world, and 42% of households worldwide own at least one bicycle, according to a 2015 study.⁴ The COVID-19 pandemic greatly influenced cycling trends, catalysing growth in both the number of people who cycle and sales of bicycles. In Europe, Latin America, and North America, many people perceived cycling as a more viable transport mode during the pandemic, whereas in most African cities the pandemic had less impact on mobility habits.⁵ Cities worldwide have turned to cycling not only to support the immediate mobility needs of residents, but also to advance sustainability goals, especially reductions in greenhouse gas emissions and improvements in air quality and active lifestyles.⁶

The global bicycle market grew 14% between 2021 and 2022, from USD 38.4 billion to USD 43.8 billion.⁷

- ▶ As of 2023, the countries with the largest bicycle fleets were China, with around 500 million units, followed by the United States with 120 million.⁸ In per capita terms, the Netherlands was the top country with nearly 1 bicycle per person, followed by Denmark and Germany with 0.75 bicycles per person and higher.⁹
- ▶ In African cities, around 95% of transport decision makers surveyed during COVID-19 restrictions (in September 2020) reported a willingness to improve conditions for walking or cycling, although they noted that a lack of reliable mobility data, technical capacity and money inhibited progress.¹⁰
- ▶ Bicycle sales in Singapore increased during the pandemic, and bike sharing companies reported higher ridership.¹¹ The operator Anywheel said its ridership increased every month in 2021, with the exception of April when lockdowns were implemented; in July 2021, the Singapore Land Transport Authority approved the expansion of Anywheel's fleet from 10,000 to 15,000 bicycles.¹²
- ▶ In 2020, more people in Canada were biking or walking to work than using public transit, according to Statistics Canada.¹³ After the onset of the pandemic, many in Canada viewed cycling as a safer alternative with a lower potential risk of contracting the virus.¹⁴
- ▶ In the United States, consumer spending on bicycles totalled USD 7.5 billion in 2022, up from roughly USD 6 billion pre-pandemic (in 2019).¹⁵
- ▶ In Brazil, bicycle sales increased 50% in 2020 then dropped 5% in 2021, although they remained well above pre-pandemic levels; in 2022, however, sales fell 35% and returned to pre-pandemic levels due to market saturation and a negative economic situation.¹⁶
- ▶ Between 2019 and 2021, weekday cycling levels fell in Canada, Finland, Germany, and Ireland, with the declines ranging from 4% in Canada to 15% in Ireland, likely due to increased remote working and learning as well as to travel restrictions during pandemic-related lockdowns.¹⁷ However, weekday cycling increased 24% in Italy and 1% in the United States and Sweden.¹⁸
- ▶ The growth in weekend cycling during the pandemic (2019-2021) ranged from highs of 55% in the United Kingdom and 49% in Ireland, to 4% in Finland and Germany.¹⁹

Global sales of electric bikes (e-bikes, including electric-assisted bikes and electric moped bikes) have boomed since the start of the pandemic, in parallel to the growth in cycling.²⁰

Global e-bike sales were already growing at an impressive 120% in 2019, to reach USD 21 billion; the market has since increased 39% to USD 29 billion in 2022 and is expected to reach USD 62.3 billion in 2030.²¹ This growth has enabled people to cycle more frequently and for longer distances, resulting in greater reductions in CO₂ emissions.

- ▶ Asia was the largest regional e-bike market in 2019, accounting for 90% of global revenue and production, followed by Europe and North America.²²
- ▶ China experienced among the quickest uptakes of e-bikes, rising 57% between 2014 and 2019, from 191 million units to nearly 300 million units and exceeding private car ownership.²³ E-bike use has nearly replaced traditional pedal bikes, especially in small to medium-sized cities. In Beijing, e-bikes accounted for 60% of all traffic using active mobility in 2019.²⁴
- ▶ A 2021 study found that in North America (Canada, Mexico and the United States), e-bike trips were 36% more common than pedal bike trips.²⁵ The use of e-bikes has also increased within shared mobility, with around half of 298 cities including e-bikes in their bike share and/or scooter share fleets as of 2021.²⁶ Between 2020 and 2021, pedal bike trips increased slightly, but e-bike trips nearly doubled.²⁷
- ▶ In Europe, 35-50% of e-bike trips replaced car trips, according to studies from 2019.²⁸

Bike share systems expanded during the pandemic and remained among the most resilient modes of shared mobility, rebounding after the first year of the pandemic.²⁹ Several

factors play into the success of bike share systems, such as the geography of cities, integration with existing transport modes, and close co-operation between operators and regulators.³⁰

- ▶ In Hangzhou (China), the world’s largest bike share programme expanded from an operating fleet of 78,000 bikes in 2018 to 116,000 in 2023.³¹ During the pandemic, the system continued to operate through disinfection and maintenance, servicing nearly 70 million people in the first 10 months after the outbreak in 2020.³² Studies between 2008 and 2020 found that Hangzhou’s bike share system was rented out 1.09 billion times, equivalent to reducing 549 million car trips and 1.46 million tonnes of CO₂ emissions.³³
- ▶ Trip volumes for one of the largest bike share operators in Latin America, Tembici, increased 34% between 2019 and 2022 across Argentina, Brazil and Chile.³⁴

The share of cycling among transport modes has mostly remained the same across countries and cities worldwide in recent years. However, in some countries, such as Singapore and the United Kingdom, the cycling share increased due to COVID-19 measures.³⁵ Based on varying estimates, in 2021 the Netherlands, Denmark, and Japan led with cycling shares of around 30% of all trips, while in 2022 China led with a share of 33%.³⁶

- ▶ In a study of cycling behaviour in 17 countries, the Netherlands had the highest cycling share among all trips (26.8%) and across a variety of indicators, including work and non-work trips and gender (see Table 1).³⁷
- ▶ Japan followed with an 11% cycling share in all trips, although its median age for cycling was older than in other countries, due likely to the generally older population.³⁸

TABLE 1. Cycling behaviour and characteristics of cyclists for urbanised areas across selected countries (listed in descending order by cycling modal share), 2021

Source: See endnote 37 for this section.

Region, Country	Modal share of cycling (%)					Share of females in cycle trips	Median age				Median distance of cycle trip (km)	Median duration of cycle trip (minutes)
	All trips	Non-work trips	Work trips	All trips (males)	All trips (females)		Cyclists	All other road users	Male cyclists	Female cyclists		
● Netherlands	26.8	27.1	25.3	25.4	28.2	54.4	36	43	30	39	2	10
● Japan	11.5	11.9	10.1	10.2	12.7	56.4	45	54	40	48		10
● Germany	9.3	9.2	9.4	9.5	9.1	49.2	52	54	51	53	2	10
● Finland	7.8	7.8	8.4	8	7.6	50.4	31	44	27	33	2	15
● Switzerland	6.7	6.3	8.1	7.2	6.3	46.6	39	46	38	41	1.7	10
● Argentina	3.6	3.3	5	4.9	2.4	33.6	33	30	34	31		15
● Chile	2.7	2.3	3.7	3.9	1.6	30.8	36	32	40	29		20
● United Kingdom	2.1	1.6	3.9	3.2	1.1	26.5	38	41	39	38	3.2	16
● Australia	1.8	1.8	1.2	2.4	1.2	35.5	34	40	34	33	2.5	15
● USA	1.1	1	1.3	1.6	0.6	30.2	39	50	40	37	1.9	15
● Brazil	0.8	0.4	1.3	1.4	0.2	13.2	35	31	36	31		20

● Asia ● Europe ● Latin America ● North America ● Oceania

TABLE 2. Cycling behaviour and characteristics of cyclists in selected cities (listed in descending order by cycling modal share), 2021

Source: See endnote 40 for this section.

City	Country	Modal share of cycling (%)					Share of females in cycle trips	Median age (years)				Median distance of cycle trip (km)	Median duration of cycle trip (minutes)
		All trips	Non-work trips	Work trips	All trips (males)	All trips (females)		Cyclists	All other road users	Male cyclists	Female cyclists		
Amsterdam	Netherlands	28.7	28.8	26.8	27.1	30.1	54.7	37	42	34	39	2	10
Osaka	Japan	28.4	28.4	28.4	21.8	34.3	64.2	52	56	53	51	-	10
Tokyo	Japan	18.7	19.2	17.1	16.9	20.2	57.5	46	49	45	46	-	10
Munich	Germany	16.3	16.6	15	15.7	16.9	51.4	-	-	-	-	2	15
Nagoya	Japan	15.7	15.4	16.5	12.1	18.9	63	44	52	41	45	-	10
Cologne	Germany	14.7	14.7	14.9	15	14.3	48.5	-	-	-	-	2	15
Berlin	Germany	14.1	14.3	13	13.1	15	53.3	-	-	-	-	2.5	15
Hamburg	Germany	13.7	14.4	11.1	13.4	14	51	-	-	-	-	2.2	10
Yokohama	Japan	8.3	8.6	7	7.8	8.7	52.8	44	48	39	46	-	15
Rosario	Argentina	8.3	7.9	10	9.8	6.9	42.3	29	32	28	30	-	15
Zurich	Switzerland	6.4	5.9	7.8	7	5.7	43.8	40	46	39	41	1.8	15
Bogotá	Colombia	6.3	4.3	9.6	9.3	3.4	27.8	34	34	34	32	-	10
Helsinki	Switzerland	5.3	5.1	7.1	5.6	5.1	49.5	37	42	35	40	3	15
Delhi	Colombia	4.8	1.3	9	6.9	1.1	8.1	38	28	40	16	3	10
Kisumu	Kenya	4.3	4.2	5	7	2.1	26.2	28	27	30	27	5	25
Bangalore	India	4	4.2	3.8	4.3	3.2	20.7	41	41	41	26	3	20
Santiago	Chile	3.7	3.4	4.6	5.1	2.5	33.3	36	36	40	30	1.6	30
Buenos Aires	Argentina	3.3	3	4.5	4.5	2.2	34.3	35	31	36	32	-	20
Montreal	Canada	2.7	2.3	3.8	3.5	2	36.7	39	43	40	38	-	20
Corboda	Argentina	2.7	2.3	3.5	3.5	1.9	35.8	31	30	35	26	2.2	20
London	England	2.6	2	4.7	4	1.3	25.3	35	37	36	34	1.9	15
Mendoza	Argentina	2.2	1.8	3.9	3.6	0.8	19.1	34	32	33	35	-	-
Mexico City	Mexico	2	1.8	2.9	3.2	1	24.1	34	34	37	29	-	15
Philadelphia	USA	1.9	1.8	2.4	3.1	1.1	33.5	-	-	-	-	2.3	15
Melbourne	Australia	1.9	1.7	2.4	2.4	1.2	26.3	35	39	36	33	2.9	20
Chicago	USA	1.5	1.5	1.5	2.2	0.9	32.2	37	46	36	37	1.5	15
Los Angeles	USA	1.3	1.3	1.6	2	0.7	29.9	-	-	-	-	2.3	20
Brisbane	Australia	1.2	1.1	1.7	1.9	0.6	27	34	38	33	36	2.8	15
New York City	USA	1.2	1.2	1.4	1.8	0.7	34.1	-	-	-	-	1.7	15
Seattle	USA	1.1	1.1	1	1.5	0.6	27.4	-	-	-	-	3.1	15
Belo Horizonte	Brazil	1	0.6	1.6	1.8	0.2	9.8	36	31	36	31	-	20
Salvador	Brazil	0.9	0.5	1.5	1.6	0.2	11.9	34	31	35	30	-	20
Gran Valparaiso	Chile	0.8	0.7	1.1	1.3	0.3	20.9	-	-	-	-	-	20
São Paulo	Brazil	0.6	0.3	1.0	1.1	0.2	12.3	30	34	31	28	2	20
Cape Town	South Africa	0.3	0.2	0.5	0.4	0.1	27	41	32	42	25	-	30

- ▶ The lowest cycling shares were in Brazil and the United States (near 1%), for years ranging from 2009 through 2019.³⁹
- ▶ Among cities, the median share of cycling among transport modes was 3.3%, ranging from a low of 0.3% in Cape Town (South Africa) to highs of 28.7% in Amsterdam (Netherlands) and 28.4% in Osaka (Japan), which also had the highest share of cycle trips by women (64.2%) (see Table 2).⁴⁰

Analysis of distance-based ratios of cycling in selected countries and cities revealed that in the Netherlands, where the cycling modal share is very high, most trip distances are two kilometres or less, reflecting the density of Dutch cities and of urban cycling networks.⁴¹ At the city level, Delhi (India) has a higher share of cycling trips taken for longer distances.⁴²

Overall, most cycling across major cities - including in Amsterdam (Netherlands), Berlin (Germany), Delhi (India), London (UK) and New York (USA) involves trips of five kilometres or less.⁴³ This has significant implications for reducing emissions from road transport, as cycling can be a reliable and potent alternative to private vehicles for these shorter journeys.

- ▶ Both Japan and the Netherlands had short median distances and durations for cycle trips, suggesting that cycling may be more frequent in countries with dense urban areas where trips are short.⁴⁴
- ▶ The likelihood of cyclists taking a short trip relative to a longer one is similar in both high-cycling countries (such as the Netherlands and Germany) and low-cycling countries (such as Chile and the United Kingdom).⁴⁵ People in Finland and the United States also show similar cycling levels by distance - despite different overall cycling levels - with both countries having the highest propensity for trips of 0-2 kilometres.⁴⁶
- ▶ People in high-cycling cities such as Amsterdam (Netherlands), Zurich (Switzerland) and German cities have a remarkably similar likelihood of cycling for a short trip versus a longer one as do people in low-cycling cities such as New York (USA) and Santiago (Chile).⁴⁷
- ▶ Cities where people have the highest propensity to cycle distances of 20 kilometres or more include cities in Australia and the United States, as well as São Paulo (Brazil).⁴⁸
- ▶ The median distance of cycle trips in selected cities ranged from 1.5 kilometres to just over 3 kilometres, with Seattle (USA) having the farthest median trip distance (3.1 kilometres).⁴⁹
- ▶ Cape Town (South Africa) and Delhi (India) logged the longest median durations of cycling trips, at 30 minutes each, and in general trips were longer in cities with lower cycling shares.⁵⁰ For countries with high cycling shares, the median duration of trips was around 10-15 minutes.⁵¹

- ▶ In Bangalore and Delhi (India), people have among the lowest propensity among cities for cycling 0-2 kilometres, and much higher propensity to cycle distances of up to 2-5 and 5-10 kilometres.⁵²

People cycle more for trips between work and home than for other purposes. In urban areas, cycling to work is 40% more common on average than cycling for a non-work trip, with this share rising to around 60% in larger cities.⁵³

- ▶ Countries where more people tend to cycle to work include Brazil, Chile, Finland, Switzerland and the United Kingdom.⁵⁴
- ▶ Among cities, Amsterdam (Netherlands) and Osaka (Japan) have very high ratios of home-work cycling trips, along with Delhi (India) and Zurich (Switzerland).⁵⁵
- ▶ Cycling is more frequently done for non-work trips in countries where the share of cycling is already high, such as the Netherlands, Japan, and Germany, which have above-average rates of non-work cycling.⁵⁶

Researchers have found mixed links between cycling and levels of education and income.

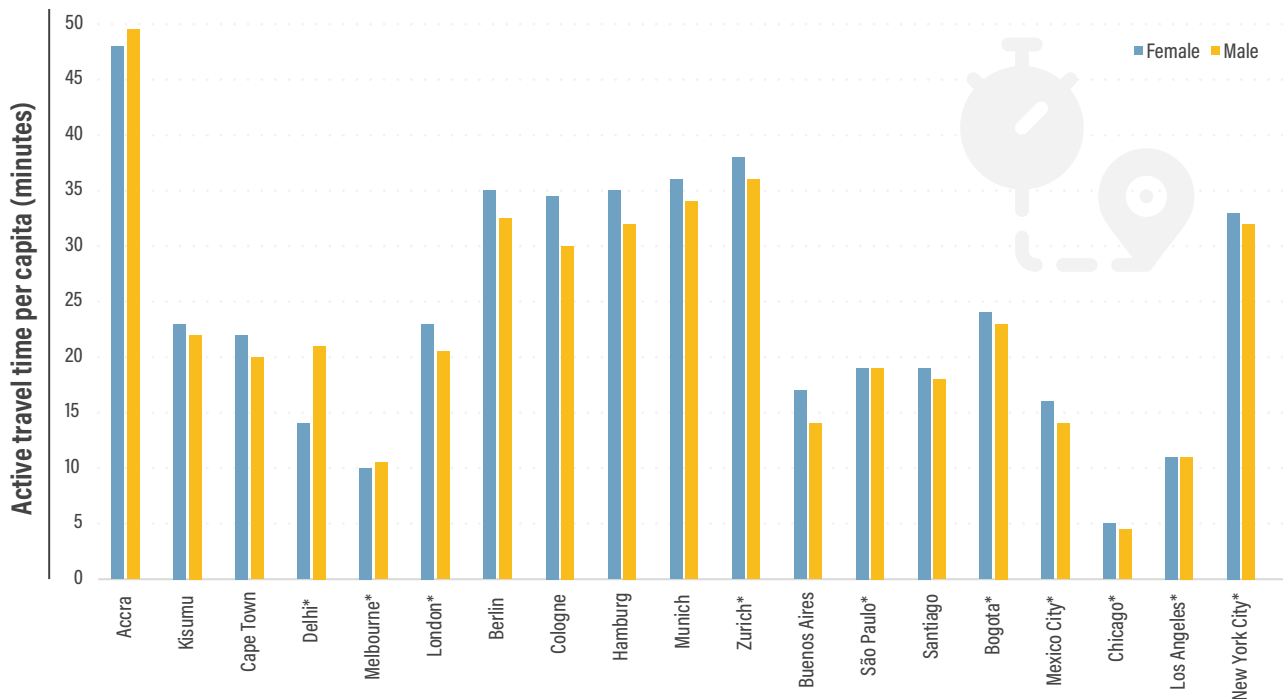
- ▶ In cities in Sub-Saharan Africa, cycling is more frequent among individuals with less formal education because of links to socio-economic status, such as not owning a car and having low income.⁵⁷
- ▶ However, in cities in high-income countries, cycling is more frequent among people with high formal education, whose motivations for cycling are more for social, economic, environmental and personal benefits.⁵⁸
- ▶ It is difficult to isolate the effect of income level in cities in low- and middle-income countries, as cycling is commonly used for last-mile connections as well as for sport and leisure, making it popular among varying income groups.⁵⁹

The link between cycling levels and the cost of buying a bicycle is not clear, with some cyclists motivated by the affordability of cycling and others not.

- ▶ Studies in cities in Sub-Saharan Africa show a strong association between living in poverty and the likelihood of cycling.⁶⁰ In 2022, people in Africa spent an average of 56 minutes per day walking or cycling for transport (compared to 43.9 minutes globally), despite unsafe road infrastructure and high fatalities among pedestrians and cyclists.⁶¹ Low-income households in Africa are most dependent on walking and cycling, and their urban transport expenditures represent up to 20% of household income.⁶² (See Section 2.1 Africa Regional Overview.)
- ▶ In South Africa, cycling in Johannesburg is highly correlated with medium and high incomes, and a study in Cape Town found that high-income individuals take 0.5 bicycle trips per person, whereas low-income individuals take 0.3 trips per person.⁶³

FIGURE 1. Active travel time per capita by gender for all age groups combined, in selected cities

Source: See endnote 75 for this section.



Note: Active time is defined as total walking and cycling duration across all trips divided by the total number of sampled individuals. Cities with an asterisk use reported data, and others represent harmonised estimates.

- ▶ Some studies found correlations between income levels and cycling in US cities, while other studies did not.⁶⁴
- ▶ Researchers found that lower costs for bicycle purchases in Dar-es-Salaam (Tanzania) would likely lead to slightly higher levels of cycling.⁶⁵
- ▶ Studies in Uganda identified a link between the affordability of bicycles and their maintenance and the ability for people to keep cycling.⁶⁶
- ▶ In Ireland, low costs were among the top three factors encouraging cycling.⁶⁷ However, other studies globally have found that frequent cyclists do not perceive the low cost of using a bicycle as a significant motivator for bicycle use.⁶⁸

A large gender gap in cycling exists in cities across the world, with women and girls (especially from marginalised populations) cycling much less than men for a variety of reasons, including lack of consistent access to bicycles, cultural and/or religious acceptance reasons, and lack of safe cycling knowledge or infrastructure. Many care-related trips – done mostly by women – require adaptations for cycling (e.g., child seats, cargo bikes) that may be costly and unavailable. Gender-based violence and street harassment may discourage women from cycling, especially at night. Still, many women,

even from marginalised communities, view the bicycle positively as an effective way to make short trips, save on transport costs, travel more quickly and freely, and break the cycle of gender violence.⁶⁹

- ▶ In Kisumu (Kenya), men account for 96% of all cyclists and use cycling for 7% of their trips, whereas women cycle for only 1% of their trips.⁷⁰
- ▶ In downtown Rio de Janeiro (Brazil), women accounted for between 2.4% and 10.9% of all cyclists, whereas men represented between 89% and 97.6% of cyclists, as of 2021.⁷¹
- ▶ In Delhi (India), where 21% of all trips are by bicycle, women constituted only 2% of cyclists in 2006.⁷²
- ▶ Since 2013, women in Saudi Arabia have been allowed to ride a bicycle only at beaches and parks, with a male guardian.⁷³ In 2019, authorities in Isfahan (Iran) announced a ban on women cycling in public.⁷⁴
- ▶ A 2022 gender analysis of the active travel time per person in selected cities found that women spent more time walking and cycling than men in all cities except Accra (Ghana) and Delhi (India) (see Figure 1).⁷⁵ On average, women had 5% more active travel time (24.4 minutes per capita) than men (23.3 minutes).⁷⁶

Cities that have the highest shares of cycling are also those that have a medium or high representation of women who cycle and a healthy mix of age demographics (see Table 3).⁷⁷

- ▶ In almost all surveyed locations where the cycling share was above 7%, women made as many cycle trips as men, and sometimes even more; in contrast, in places with cycling shares below 7%, the share of cycling trips by women was much lower.⁷⁸
- ▶ In places with higher cycling shares, children under 16 were often over-represented.⁷⁹ Older adults (above 60 years) remain under-represented in all geographies but have relatively better representation where levels of cycling are high.⁸⁰ In low-cycling settings, women are under-represented across all age groups, especially women older than 16 years.⁸¹

Such figures demonstrate the need to enable more inclusivity among gender and age demographics in urban mobility systems. Cities that are safe for cycling and have a high cycling modal share are also cities where women and people of all ages enjoy cycling, which can lead to improved health outcomes, societal equity and lower CO₂ emissions.

Every year, an estimated 41,000 cyclists die in road traffic-related incidents worldwide, representing 3% of global road

traffic deaths in 2019.⁸² A quarter of the global cyclist deaths occur in Africa (see Section 2.1 Africa Regional Overview).⁸³ In a study of urban populations aged 20 to 64 years in 17 countries, researchers concluded that shifting to high bike-use scenarios by 2050 could prevent 205,424 annual road traffic-related premature deaths (assuming that 100% of bike trips replace car trips).⁸⁴ In a more conservative scenario, where only 8% of bike trips replace car trips, 18,589 annual premature deaths could be prevented by 2050.⁸⁵

- ▶ **Bicycle deaths in the United States rose 5% in 2021**, according to the US National Highway Transportation and Safety Administration.⁸⁶
- ▶ In all countries and scenarios studied, the mortality benefits related to bike use (compared to car use) outweighed the mortality risks; the biggest impact would be in India, where even in the conservative scenario 6,957 premature deaths could be avoided, with China following with 4,127 avoidable premature deaths.⁸⁷
- ▶ More than 1,000 premature deaths in car traffic could be avoided in Austria, the United States, and Indonesia, in high bike-use scenarios.⁸⁸



TABLE 3. Share of women represented in urban cycling modal share, by age, 2021

Source: See endnote 77 for this section.

City	Country	Modal share	Women's share	0-15 years	16-59 years	60+ years	Cluster	Cluster description	
	Brazil	0.8	13	0.35	1.24	0.48	*		
	Chile	2.7	31	0.68	1.26	0.68	1		
Belo Horizonte	Brazil	1	10	0.33	1.22	0.58	1		
Chicago	USA	1.5	32	1.08	1.16	0.35	1	Low-cycling, gender-unequal, highly age-unequal	
London	United Kingdom	2.6	25	0.76	1.15	0.47	1		
Montreal	Canada	2.7	37	0.57	1.22	0.38	1		
Salvador	Brazil	0.9	12	0.45	1.22	0.39	1		
Santiago	Chile	3.7	33	0.7	1.17	0.54	1		
Seattle	USA	1.1	27	0.91	1.17	0.25	1		
	Argentina	3.6	34	0.66	1.11	0.95	*		
Buenos Aires	Argentina	3.3	34	0.64	1.11	1.01	2		Low-cycling, gender-unequal, age-equal (older adults)
Cordoba	Argentina	2.7	36	0.84	1.06	0.9	2		
Mendoza	Argentina	2.2	19	0.29	1.18	0.99	2		
Mexico City	Mexico	2	24	0.77	1.04	0.99	2		
	Australia	1.8	36	1.06	1.07	0.67	3		
	United Kingdom	2.1	27	0.88	1.15	0.65	3		
	USA	1.1	30	1.58	1.04	0.54	3		
Bangalore	India	4	21	1.22	1.05	0.73	3	Low-cycling, gender-unequal, age-equal (children only)	
Bogotá	Colombia	6.3	28	0.67	1.11	0.71	3		
Brisbane	Australia	1.2	27	1.44	0.98	0.56	3		
Los Angeles	USA	1.3	30	1	1.05	0.61	3		
Melbourne	Australia	1.9	26	1	1.09	0.61	3		
New York City	USA	1.2	34	0.76	1.12	0.67	3		
Philadelphia	USA	1.9	33	0.85	1.11	0.49	3		
Rosario	Argentina	8.3	42	1.07	1.05	0.58	3		
Zurich	Switzerland	6.4	44	1.49	1.07	0.52	3		
	Finland	7.8	50	2.74	0.77	0.63	4		Medium-cycling, gender-equal, children over-represented
	Germany	9.3	49	2.07	0.97	0.92	4		
	Switzerland	6.7	47	1.84	1	0.6	4		
Berlin	Germany	14.1	53	1.61	0.97	0.67	4		
Hamburg	Germany	13.7	51	1.53	0.96	0.75	4		
Helsinki	Finland	5.3	50	1.92	0.9	0.84	4		
	Japan	11.5	56	1.17	1.14	0.79	5	High-cycling, women over-represented, age-equal	
	Netherlands	26.8	54	1.36	0.92	0.94	5		
Amsterdam	Netherlands	28.7	55	1.25	0.96	0.91	5		
Cologne	Germany	14.7	49	1.13	1.11	0.55	5		
Munich	Germany	16.3	51	1.27	0.99	0.83	5		
Nagoya	Japan	15.7	63	0.85	1.23	0.71	5		
Osaka	Japan	28.4	64	0.84	1.09	0.9	5		
Tokyo	Japan	18.7	58	0.97	1.05	0.91	5		
Yokohama	Japan	8.3	53	0.87	1.12	0.82	5		
Cluster 1 Average		2	24	0.61	1.2	0.48	1		
Cluster 2 Average		3.1	28	0.61	1.11	0.95	2		
Cluster 3 Average		3.4	31	1.12	1.07	0.62	3		
Cluster 4 Average		9.6	50	1.84	0.93	0.73	4		
Cluster 5 Average		18.8	56	1.08	1.07	0.82	5		

Note: The table presents five clusters with a minimum of 6 geographies in one cluster and a maximum of 12, depicting the level of cycling, representation of women and representation of age groups among cyclists.

Emission trends



Cycling can lead to dramatic reductions in greenhouse gas emissions from transport. People who cycle daily emit an estimated 84% fewer carbon emissions from their daily travel than those who do not.⁸⁹ Studies report that replacing a daily car journey with an e-bike can save an average of 249 grams of CO₂ for every kilometre travelled.⁹⁰

- ▶ Cycling has the lowest life-cycle CO₂ emissions (i.e., emissions caused during the production of a vehicle) among all wheeled transport modes, contributing just 8 grams per kilometre.⁹¹
- ▶ In one study, urban residents who switched from driving to cycling for just one trip per day reduced their CO₂ footprint by around half a tonne over the course of a year, saving the emissions equivalent of a one-way flight from London to New York.⁹² If just one in five urban residents made this change permanently over the next few years, the emissions from all car travel in Europe could be cut by around 8%.⁹³
- ▶ Studies from 2018 found that in the EU, cycling saves more than 16 million tonnes of CO₂-equivalent emissions annually, equal to the yearly emissions of Croatia and resulting in estimated savings of up to EUR 5.6 million (USD 6 million), depending on the social cost of carbon.⁹⁴
- ▶ If everyone in the world cycled 1.6 kilometres a day (the average distance cycled in Denmark), an estimated 414 million metric tonnes of carbon emissions could be reduced; if everyone cycled 2.6 kilometres per day (the daily cycling distance in the Netherlands), the emission reduction would rise to 686 million metric tonnes.⁹⁵

E-bikes have the capability to reduce per capita CO₂ emissions, especially in rural areas where people typically travel longer distances and are more car dependent.⁹⁶

- ▶ A 2022 study in England found that e-bikes can reduce 24.4 million tonnes of transport CO₂ emissions annually.⁹⁷ The reduction was highest in urban areas (excluding conurbationsⁱ), was lower in rural areas (which tend to be more car-dependent) and was lowest in conurbations (which have greater access to public transport).⁹⁸ Despite this, mobility service providers and initiatives such as e-bike sharing schemes largely overlook rural areas.⁹⁹

Cargo bikes are increasingly recognised globally as a more climate-friendly and economical substitute for delivery vans, for both small and large delivery companies; however, this is limited to the context of last-mile logistics, rather than for long-distance freight transport.

- ▶ A 2016 study found that cargo bikes could replace up to 51%

of all freight journeys in European cities.¹⁰⁰

- ▶ In Brussels (Belgium), public-private partnerships provide a cargo bike sharing service to tackle air pollution. A free two-week trial service for electric cargo bikes was successfully launched in 2021 and was later expanded in 2022 with more bikes and stations.¹⁰¹
- ▶ Using GPS data from the cargo bike company Pedal Me, which operates within a nine-mile (14.8 kilometres) radius of central London, researchers compared cargo bike deliveries on 100 random days with the routes that vans would have taken to get the parcels to customers and found that the cargo bikes saved nearly 4 tonnes of CO₂ emissions in 2021.¹⁰²
- ▶ A US study found that e-cargo bikes are more cost-effective than delivery trucks for deliveries near urban centres when there is a high density of residential units and low delivery volumes per stop.¹⁰³
- ▶ In a UK study, cargo bikes resulted in cost savings of 80-90% compared to using commercial vans.¹⁰⁴
- ▶ FedEx aims to expand its fleet of e-cargo bikes in the United Kingdom as its moves towards a zero-emission delivery service.¹⁰⁵
- ▶ A 2022 study in Ghana found that if e-cargo bikes claimed a large share in the modal split, they could reduce the greenhouse gas emissions from the country's urban freight transport system 4-8% per tonne-kilometre.¹⁰⁶

Policy developments



Leading barriers to cycling include being too close to car traffic, a lack of quality infrastructure, perceptions of poor physical fitness, and negative community perceptions of cyclists.¹⁰⁷ Globally, a key enabler for a high cycling share is the presence of safe infrastructure.¹⁰⁸ People are more encouraged to cycle in locations that have good-quality paved roads, well-lit streets with low traffic volumes, and adequate physical on-street separation from motor vehicle traffic (for example, concrete barriers, metal bollards, planter boxes, a grass verge, railings, curbs or landscaping).¹⁰⁹ Cycle paths through parks and other car-free areas are also considered physically protected. Other enablers of cycling include secure bicycle storage, economic factors or incentives, environmental and health benefits, and seeing other people ride bikes.¹¹⁰

- ▶ In Tamale Metropolis (Ghana), researchers found that good-quality roads encourage bicycle commuting, as cyclists prefer paved main roads.¹¹¹

ⁱ A conurbation is "a large area consisting of cities or towns that have grown so that there is very little room between them"; see Encyclopedia Britannica, <https://www.britannica.com/dictionary/conurbation>.

- ▶ In contrast, a study in Quelimane (Mozambique) found that people who commute by bicycle between the city periphery and suburban areas tend to take unpaved roads, as these are perceived as being safer (less motorised traffic), even if less comfortable.¹¹²
- ▶ In Addis Ababa (Ethiopia) and in townships in South Africa, people are discouraged from cycling due to poor road quality.¹¹³ Ethiopia's Non-Motorised Transport Strategy targets building more than 300 kilometres of cycling track in secondary cities, as well as 200 kilometres of cycling lanes in Addis Ababa, by the year 2029.¹¹⁴
- ▶ Researchers in Vancouver (Canada) found that poorly lit bicycle lanes are strongly linked to low levels of cycling.¹¹⁵
- ▶ In a UK study, a top motivator influencing a person's decision to cycle was being able to make a cycling trip during daylight hours.¹¹⁶
- ▶ A global survey of 28 countries found that 52% of people consider cycling too dangerous in their area.¹¹⁷

Countries that have implemented national cycling promotion strategies include Finland, Germany, Japan and the Netherlands.¹¹⁸ In 2022, studies found that Flanders (Belgium) leads in government financial investments in cycling,

at EUR 45 (USD 49.5) per capita, followed by Ireland and Norway.¹¹⁹

- ▶ The Netherlands remains the European leader in planning for cycling. In 2015, the country's Tour de Force plan brought together various government and non-governmental entities, as well as businesses and academia, to promote cycling; in 2022, a proposed national vision for cycling called on the Dutch government to invest EUR 950 million (USD 1.03 billion) in cycling from 2022 to 2025, resulting in investments of EUR 13.6 (USD 14.8) per capita.¹²⁰
- ▶ In November 2022, the Dutch government announced that it would make new investments of up to EUR 1 billion (USD 1.09 billion) from central government and city financial sources in new cycle routes, bicycle parking, and additional bridges and tunnels for cyclists.¹²¹
- ▶ Germany's national cycling plan for 2021-2030 is one of the most complete in Europe, with the aim of developing seamless cycling infrastructure, creating a country of cycling commuters and cyclists, and putting cycling at the heart of mobility systems.¹²² The German government allocated EUR 1.5 billion (USD 1.9 billion) from 2021 to 2023 to support implementation of the plan.¹²³



- ▶ In 2021, the German government's International Climate Initiative initiated a project to transform Ghana's freight transport system through the use of e-cargo bikes produced locally from 100% recycled materials.¹²⁴
 - ▶ Finland and Japan both have national strategies for cycling, demonstrating that those countries where the share of cycling is highest are also those that have implemented national cycling promotion plans, linked with financial investments.¹²⁵
 - ▶ In 2020, India launched the India Cycles4Change Challenge to inspire more than 100 cities to become cycling havens, resulting in pilot cycling-friendly solutions along 400 kilometres of main roads and 3,500 kilometres of neighbourhood streets.¹²⁶ The 25 most successful cities are receiving support to further integrate cycling in their streets through new cycling plans.¹²⁷
 - ▶ Canada released its first national active transport strategy in 2021 to provide CAD 400 million (USD 298.8 million) from 2021 to 2026.¹²⁸
 - ▶ In 2022, Colombia developed the National Strategy of Active Mobility with a Gender and Differential Approach (ENMA), which provides guidelines for local governments to promote walking and cycling, consider the needs of people with reduced mobility and disabilities, and advance gender equality.¹²⁹ The complementary Guide for Shared Bicycle Systems helps local governments evaluate the technical, regulatory and financial aspects for implementing bike sharing systems in large and small cities.¹³⁰ (See Section 2.4 Latin America and the Caribbean Regional Overview.)
 - ▶ In 2022, Wellington City Council (New Zealand) approved a new long-term cycling plan, Paneke Pōneke Bike Network, aimed at expanding cycling networks to connect suburbs with the city centre.¹³¹
- Many cities in Asia, Europe, Latin America and the Caribbean, and North America expanded their cycling networks during the COVID-19 pandemic by adding new lanes and tracks as well as pop-up bicycle infrastructure, in response to the increased demand for cycling. More than 2,500 kilometres of temporary cycling infrastructure was added in Europe over this period, much of which is now permanent.**¹³²
- ▶ Several dozen European cities announced or implemented pandemic-related cycling measures, of which 77% were new cycle lanes and tracks.¹³³ Studies found that cities that provided temporary cycling infrastructure (such as reallocating travel lanes to bikes) saw a much greater increase in cycling than those that did not.¹³⁴
 - ▶ During March to July 2020, the implementation of pop-up bike lanes contributed to 11-48% more cycling across 106 European cities.¹³⁵ For the cities that built pop-up lanes, if people stuck with their new cycling habits, the overall health cost savings would be more than USD 1 billion per year.¹³⁶
 - ▶ In recent decades, Paris has transformed its streets to become more people-oriented, a trend that accelerated following the onset of the pandemic.¹³⁷ Cycling lanes increased from just 5 kilometres in the 1990s to more than 240 kilometres by early 2023, while much of the city has been increasingly pedestrianised.¹³⁸ The share of walking among all trips increased from 38% in 2018 to 47% in 2022, while cycling increased from 2% to 5% during the same period.¹³⁹
 - ▶ London (UK) implemented 75 kilometres of new cycle lanes and tracks in 2020, the largest amount in Europe, followed by Milan (Italy) with 51 kilometres.¹⁴⁰
 - ▶ The municipal government of Beijing (China) committed in 2022 to improving walking and cycling infrastructure, and by October it had introduced 21 cycling routes totalling 730 kilometres.¹⁴¹ In 2021, the city implemented around 52 kilometres of improvements in walking and cycling, and the share of these two modes among all trips reached an all-time high of 47.8%.¹⁴²
 - ▶ In 2021, the Philippines' Department of Transport completed 500 kilometres of bike lanes along the metro routes of three cities: Manila (313 kilometres), Cebu (129 kilometres) and Davao (55 kilometres).¹⁴³
 - ▶ In 2022, Jakarta (Indonesia) completed 309 kilometres of bike lanes, out of a total 500 kilometres planned, with government data showing that the average number of cyclists daily in the city had surged from 47 in 2005 to 4,000 in 2022.¹⁴⁴
 - ▶ Across India, 28 cities have identified a total of 210 square kilometres of neighbourhood areas to use to create cycling infrastructure, as well as a 340-kilometre pilot corridor.¹⁴⁵
 - ▶ Several cities in Canada set up temporary bike lanes to accommodate the pandemic cycling boom. Cities that have extended their bike lane networks since the onset of the pandemic include Calgary, Kitchener, Moncton, Montreal, Ottawa, Toronto, Vancouver, Victoria and Winnipeg.¹⁴⁶
 - ▶ In Montreal (Canada), the Société du parc Jean-Drapeau, which runs the park area that includes Île Sainte-Hélène and Île Notre-Dame, opened a year-round cycling route in winter 2022 between the Jacques-Cartier and Concorde bridges.¹⁴⁷
 - ▶ In 2022, Boston (USA) set a goal to enable half of the city's population to access a protected bike lane within a three-minute walk by 2025.¹⁴⁸ The plan involves building new cycling infrastructure, adding 100 new stations to the bike sharing system and installing more than 100 new speed humps or raised crosswalks to calm traffic on neighbourhood streets.¹⁴⁹
 - ▶ In February 2023, Fayetteville, Arkansas (USA) updated its Active Transportation Plan with a vision to "develop and promote an interconnected and universally accessible network of sidewalks, trails and on-street bicycle facilities

that encourage citizens to use active/non-automotive modes of transportation to safely and efficiently reach any destination".¹⁵⁰

- ▶ In 2020, Wollongong (Australia) developed a comprehensive 2030 cycling strategy with a 10-year vision to make cycling the preferred option for transport by the city's inhabitants.¹⁵¹ The strategy includes commitments to build 50 kilometres of on-street cycling routes and 30 kilometres of off-street cycling routes via partnerships with state and federal partners, to expand the city's cycle infrastructure from 130 kilometres to 215 kilometres.¹⁵²
- ▶ Abu Dhabi (United Arab Emirates) launched the Bike Abu Dhabi platform in 2021 to encourage cycling as a way to stay healthy and fit. Abu Dhabi provides 300 kilometres of dedicated cycle tracks, including a 20-kilometre urban track that is fully separated from car and pedestrian traffic; the government plans to link the city's cycling infrastructure with Dubai and to connect all city hubs in a loop with no interference from other modes of transport.¹⁵³

In **Latin America**, cities are poised to advance cycling due to their high densities and mixed land uses, which would ensure high accessibility to resources and services via bicycle.¹⁵⁴ Several large cities in the region have started to adopt bike-friendly

policies and to invest in cycling initiatives.¹⁵⁵ The pandemic fast-tracked cycling agendas in the region by presenting an opportunity to rapidly construct pop-up bike lanes that many cities hope to make permanent.¹⁵⁶

- ▶ Bogotá (Colombia) attracted worldwide attention as one of the first cities to install temporary bike lanes to promote socially distanced transport during the pandemic; the city later integrated 28 kilometres of its 84-kilometre temporary bike lane system into its rapidly growing permanent system.¹⁵⁷ Bogotá had a total of 590 kilometres of cycling infrastructure in 2021 and plans to expand this to 830 kilometres by 2024.¹⁵⁸
- ▶ Between 2019 and 2022, Mexico City built 206 kilometres of protected cycling lanes, more than the amount built in the previous 14 years (174 kilometres) and bringing the total network to 381 kilometres.¹⁵⁹ The goal is to expand the network to 600 kilometres and to reach 510,000 daily bicycle trips by 2024 to reduce transport-related emissions.¹⁶⁰
- ▶ In 2021, the Buenos Aires (Argentina) set a goal of achieving 1 million bike rides a day, along with a 17 kilometre expansion of protected bike lanes in the city centre.¹⁶¹ Authorities report that demand for bicycles in Argentina since the pandemic grew 50%, and online bike sales increased 130%.¹⁶² In 2022, the city met its goal of having 300 kilometres of protected



cycling lanes (up from 267 kilometres in 2020), and the city was set to reach 1 million daily bicycle trips in 2023, three times more than in 2019.¹⁶³ During the pandemic, there was also a surge in the bike share system, with 4,000 bicycles operating across 400 stations.¹⁶⁴

- ▶ With the onset of the pandemic, Zapopan (Mexico) presented an emerging cycle lane strategy, which involves building three lanes totalling 15.3 kilometres to connect the city with Guadalajara, at an investment cost of MXN 30 million (USD 1.75 billion).¹⁶⁵ The first lane was built on Avenue Guadalupe from May to July 2020, in response to a 43% increase in morning ridership and a 33% increase in evening ridership on the corridor over the previous three years.¹⁶⁶ Ridership grew 26% from May to August of 2020, to 2,875 cyclists (31.6% more than in April 2016).¹⁶⁷

In recent years, cycling policies have emerged as key measures for climate change adaptation and mitigation. Since 2018, when the United Nations (UN) declared June 3 as World Bicycle Day, several important developments have promoted cycling at the global and regional levels.¹⁶⁸

- ▶ In March 2022, the **UN General Assembly** unanimously adopted a resolution on cycling promotion that makes several recommendations to member states, including above all “to integrate cycling into public transportation in urban and rural settings in developed and developing countries” to promote sustainable development and cut transport emissions.¹⁶⁹
- ▶ The **Pan-European Master Plan for Cycling Promotion**, adopted in May 2021, aims to politically acknowledge the growing importance of cycling in transport and to give national-level guidance on how to support cycling through central government policies.¹⁷⁰ Covering 56 countries, including all 27 EU Member States, the plan was developed under the umbrella of the Transport, Health and Environment Pan-European Programme (THE PEP), co-ordinated by the World Health Organization Europe and the UN Economic Commission for Europe.¹⁷¹
- ▶ In February 2023, the **European Parliament** adopted a resolution calling for an EU cycling strategy with benchmarks for new funding and cycling infrastructure, marking the highest ever political endorsement of cycling made by an EU institution.¹⁷² The resolution earmarks EUR 20 billion (USD 21.8 billion) to create 100,000 kilometres of cycle infrastructure in urban hubs and to extend the European cycle route network (EuroVelo) to boost rural connectivity and cycle tourism; the goal is to increase the number of kilometres that people cycle in Europe to 312 billion by 2030.¹⁷³

As of March 2023, 31 (or 22%) of countries’ second-generation Nationally Determined Contributions (NDCs) towards reducing emissions under the Paris Agreement covered transport mitigation actions on cycling or active mobility.¹⁷⁴

- ▶ Albania’s second-generation NDC includes a target for cycling to comprise 5% of all passenger activity by 2030.¹⁷⁵
- ▶ In its NDC, Egypt mentions the adoption of a national active mobility strategy, encouraging citizens to cycle and cities to build designated cycling lanes.¹⁷⁶
- ▶ Vanuatu’s updated NDC targets a fleet of 1,000 electric bicycles and rickshaws by 2030.¹⁷⁷
- ▶ At the 2021 UN Climate Change Conference in Glasgow, United Kingdom (COP 26), ministers agreed on a global transport declaration that incorporated active travel for the first time ever at this level.¹⁷⁸ The last paragraph, added at the end of negotiations thanks to persistent lobbying from non-governmental organisations, states that “alongside the shift to zero emissions vehicles, a sustainable future for road transport will require wider system transformation, including support for active travel”.¹⁷⁹

Partnership in action



SLOCAT partners engaged in dozens of actions during 2020-2022, including:

- ▶ In 2021, the **African Network for Walking and Cycling (ANWAC)** was created as a space for organisations and experts to convene and collaborate under the auspices of a common goal: making the life of people who walk and cycle in African countries safer, healthier and more comfortable through combined action, expertise and influence.¹⁸⁰
- ▶ At COP 26 in 2021, the **European Cyclists’ Federation (ECF)** spearheaded the joint open letter signed by 350 non-governmental organisations that helped influence transport ministers to include active mobility in their final declaration as a key means to decarbonise road transport.¹⁸¹ Signatories included ECF, the Institute for Transportation and Development Policy (ITDP), PeopleForBikes, Union Cycliste Internationale (UCI), the International Association of Public Transport (UITP), the World Cycling Alliance (WCA) and Greenpeace.¹⁸²
- ▶ At the 2022 UN Climate Change Conference in Sharm el-Sheikh, Egypt (COP 27), the **Partnership for Active Travel and Health (PATH)** co-ordinated a joint open letter signed by around 400 organisations from 73 countries urging government and city leaders to invest more in walking and cycling to achieve climate goals and improve quality of life.¹⁸³ PATH members include the Africa Network for Walking and Cycling, BYCS, the Dutch Cycling Embassy, ECF, the FIA Foundation, ITDP, SLOCAT, the Transport Decarbonisation Alliance, UCI, the UN Environment Programme, Walk21, WCA and the World Resources Institute.

- ▶ In 2021, the **Institute for Transportation and Development Policy** launched the **Cycling Cities** global campaign to influence 250 cities to design, adopt and implement more cycling-friendly plans by 2050. As of early 2023, the campaign had reached 28 cities and more than 40 partners working at the local, national and international level, with key milestones including reports on the economic case for cycling and on how cycle lanes cut CO₂ emissions.¹⁸⁴
- ▶ In 2021, **Union Cycliste Internationale (UCI)** launched its new sustainability strategy with a vision to make cycling “one of the world’s most sustainable sports and promote the bicycle as a key transport mode in combating climate change, improving population health and building a more sustainable future for all”.¹⁸⁵ In 2022, UCI launched its Climate Action Charter. Both efforts are closely linked to UCI’s Cycling for All Programme and objective of getting more people to cycle for daily transport.¹⁸⁶ UCI’s Bike City label network, advocacy partnerships and resources promote cycling at the international level, in connection to the UN Sustainable Development Goals.¹⁸⁷
- ▶ The **Bloomberg Initiative for Cycling Infrastructure**, a collaboration between Bloomberg Philanthropies and the Global Designing Cities Initiative, was launched in October 2022 with the aim of providing USD 400,000 to USD 1 million to 10 different cities (of more than 100,000 residents) worldwide to transform their cycling infrastructure.¹⁸⁸
- ▶ In 2022, the **European Cyclists’ Federation** published an annual review of national cycling strategies in Europe, covering 44 countries and showing good examples of national cycling strategies and plans, while also demonstrating the need for many countries to improve their implementation of cycling measures.¹⁸⁹



Photo: Mikael Colville-Andersen

3.3 CYCLING

- 1 Bike Europe (2022), "E-bikes now account for 10% of global bicycle sales", 2 December, <https://www.bike-eu.com/44234/e-bikes-now-account-for-10-of-global-bicycle-sales>.
- 2 European Parliament (2023), "Motion for a resolution on developing an EU cycling strategy, 2022/2909 (RSP)", https://www.europarl.europa.eu/doceo/document/B-9-2023-0102_EN.pdf.
- 3 A. Neves and C. Brand (2019), "Assessing the potential for carbon emissions savings from replacing short car trips with walking and cycling using a mixed GPS-travel diary approach", *Transportation Research Part A: Policy and Practice*, Vol. 123, pp. 130-146, <https://doi.org/10.1016/j.tra.2018.08.022>.
- 4 Worldometer (2022), "Bicycles produced this year", <https://www.worldometers.info/bicycles>; O. Oke et al. (2015), "Tracking global bicycle ownership patterns", *Journal of Transport & Health*, Vol. 2, No. 4, pp. 490-501, <https://doi.org/10.1016/j.jth.2015.08.006>.
- 5 United Nations Environment Programme (UNEP) and UN-Habitat (2022), "Walking and Cycling in Africa: Evidence and Good Practice to Inspire Action", <https://www.unep.org/resources/report/walking-and-cycling-africa-evidence-and-good-practice-inspire-action>.
- 6 R. Buehler and J. Pucher (2022), "Cycling through the COVID-19 pandemic to a more sustainable transport future: Evidence from case studies of 14 large bicycle-friendly cities in Europe and North America", *Sustainability*, Vol. 14, No. 12, <https://doi.org/10.3390/su14127293>.
- 7 Mobility Foresights (2021), "Worldwide bicycle market size in 2021, with a forecast from 2022 to 2027", Statista, 12 July, <https://www.statista.com/statistics/1356736/bicycle-market-forecast-global>.
- 8 J. Watson (2023), "How many bicycles are in the world? - Figures that impress!" Bike the Sites, 16 May, <https://www.biketbsites.com/how-many-bicycles-are-in-the-world>.
- 9 D. Jones (2023), "How many bicycles are there in the world?" Discerning Cyclist, 7 April, <https://discerningcyclist.com/how-many-bicycles-in-world>.
- 10 UNEP and UN-Habitat, op. cit. note 5.
- 11 A.Z. Abdullah (2020), "Singapore sees cycling boom amid COVID-19, with increased ridership and bicycle sales", channelnewsasia, 25 August, <https://www.channelnewsasia.com/singapore/covid-19-cycling-popularity-bicycle-sales-shared-bikes-631621>.
- 12 Ibid.
- 13 Statistics Canada (2020), "More commuters now walk or bike to work than take public transit", The Daily, 10 August, <https://www150.statcan.gc.ca/n1/daily-quotidien/200810/dq200810a-eng.htm>.
- 14 K. Iassinovskaia (2021), "How pandemic bike lanes made some Canadian cities more accessible", CBC News, 18 March, <https://www.cbc.ca/news/science/pandemic-bike-lanes-canada-1.5951863>.
- 15 F. Richter (2022), "Pandemic-fueled bicycle boom is losing speed", Statista, 13 May, <https://www.statista.com/chart/25088/us-consumer-spending-on-bicycles>.
- 16 Aliança Bike (2023), "Brazilian Association of the Bicycle Sector: Technical Bulletin of Retail Trade", <https://aliancabike.org.br/dados-do-setor/ven-das-utilizacao>, accessed 10 August 2023.
- 17 Buehler and Pucher, op. cit. note 6.
- 18 Ibid.
- 19 Ibid.
- 20 Statista (2022), "Projected global e-bike market size in key regions 2018-2030", 16 November, <https://www.statista.com/statistics/1260524/global-e-bike-market-forecast-by-region>.
- 21 Ibid.
- 22 Precedence Research (2022), "E-bike market size to worth around US\$ 40.98 billion by 2030", Globe-newswire, 7 February, <https://www.globenewswire.com/news-release/2022/02/07/2380421/0/en/E-bike-Market-Size-to-Worth-Around-US-40-98-Billion-by-2030.html>.
- 23 L. Lei, S. Carbon and G. Qian (2023), "Towards a National Active Mobility Strategy and an Indicator System for Active-Mobility Friendly Cities in China", Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), <https://transition-china.org/wp-content/uploads/2023/01/ActiveMobility.pdf>; Bloomberg (2021), "E-Bikes Rule China's Urban Streets: Hyperdrive Daily", 5 April, <https://www.bloomberg.com/news/newsletters/2021-04-05/hyperdrive-daily-e-bikes-rule-china-s-urban-streets>.
- 24 Ibid.
- 25 North American Bikeshare and Scootershare Association (NABSA) (2022), "3rd Annual Shared Mobility State of the Industry", <https://doi.org/10.7922/G2H-D770P>.
- 26 Ibid.
- 27 Ibid.
- 28 D. Fitch (2019), "Electric assisted bikes (e-bikes) show promise in getting people out of cars", University of California at Davis, <https://escholarship.org/uc/item/3mm040km>.
- 29 United Cities and Local Governments Asia-Pacific (2023), "Hangzhou: Public bicycle sharing and green travel practice", 31 March, <https://uclg-aspac.org/hangzhou-public-bicycle-sharing-and-green-travel-practice>.
- 30 H. Ngo (2021), "Bicycle share schemes have had huge success in some cities and flopped spectacularly in others - what is it that makes or breaks a bike share?" BBC Future Planet, 12 January, <https://www.bbc.com/future/article/20210112-the-vast-bicycle-graveyards-of-china>.
- 31 United Cities and Local Governments Asia-Pacific, op. cit. note 29.
- 32 Ibid.
- 33 Ibid.
- 34 F.Z. Menezes (2022), "Tembici saw shared bike use jump 34% in Latin America in two years", Latin America Business Stories, 23 May, <https://labsnews.com/en/news/business/tembici-bike-sharing-study>.
- 35 R. Goel (2022), "Cycling behaviour in 17 countries across 6 continents: Levels of cycling, who cycles, for what purpose, and how far?" *Transport Reviews*, Vol. 42, No. 1, <https://doi.org/10.1080/01441647.2021.1915898>.
- 36 Ibid.; IPSOS (2022), "Cycling Across the World, a 28-country Global Advisor Survey", May, <https://www.ipsos.com/sites/default/files/ct/news/documents/2022-05/Global%20Advisor-Cycling%20Across%20the%20World-2022%20Report.pdf>.
- 37 Table 1 from Goel, op. cit. note 35.
- 38 Ibid.
- 39 Ibid.
- 40 Table 2 from Ibid.
- 41 Ibid.
- 42 Ibid.
- 43 Ibid.
- 44 Ibid.
- 45 Ibid.
- 46 Ibid.
- 47 Ibid.
- 48 Ibid.
- 49 Ibid.
- 50 Ibid.
- 51 Ibid.
- 52 Ibid.
- 53 Ibid.
- 54 Ibid.
- 55 Ibid.
- 56 Ibid.
- 57 C.J. Mendiata et al. (2022), "Cycling in sub-Saharan African cities: Differences and similarities with developed world cities", *IATSS Research*, Vol. 46, No. 3, <https://www.sciencedirect.com/science/article/pii/S0386111222000346>.
- 58 H. Marquart et al. (2020), "The planned and the perceived city: A comparison of cyclists' and decision-makers' views on cycling quality", *Journal of Transport Geography*, Vol. 82, <https://www.sciencedirect.com/science/article/pii/S0966692319303825>; Mendiata et al., op. cit. note 57; S.A. Useche (2019), "Healthy but risky: A descriptive study on cyclists' encouraging and discouraging factors for using bicycles, habits and safety outcomes", *Transportation Research Part F: Traffic Psychology and Behaviour*, Vol. 62, pp. 587-598, <https://www.sciencedirect.com/science/article/pii/S1369847818306934>.
- 59 Ibid.
- 60 Ibid.
- 61 UNEP and UN-Habitat, op. cit. note 5.
- 62 M. Vanderschuren (2012), "Non Motorised Transport in Africa", https://www.researchgate.net/publication/282764517_Non_Motorised_Transport_in_Africa.
- 63 Mendiata et al., op. cit. note 57.
- 64 M. Branion-Calles et al. (2019), "Associations between individual characteristics, availability of bicycle infrastructure, and city-wide safety perceptions of bicycling: A cross-sectional survey of bicyclists in 6 Canadian and U.S. cities", *Transportation Research Part A: Policy and Practice*, Vol. 123, pp. 229-239, <https://www.sciencedirect.com/science/article/pii/S0966692319303825>.
- 65 L.D. Olvera et al. (2008), "Household transport expenditure in Sub-Saharan African cities: Measurement and analysis", *Journal of Transport Geography*, Vol. 16, No. 1, 2008, pp. 1-13, <https://www.sciencedirect.com/science/article/pii/S0966692307000452>.
- 66 Mendiata et al., op. cit. note 57.
- 67 E. Mullan (2012), "Swapping the Lycra for the suit: Determinants of cycling for transport among leisure cyclists in Ireland", *International Journal of Health Promotion and Education*, Vol. 50, p. 229, <https://doi.org/10.1080/14635240.2012.702510>.
- 68 S. Useche et al. (2019), "Healthy but risky: A descriptive study on cyclists' encouraging and discouraging factors for using bicycles, habits and safety outcomes", *Transportation Research Part F: Traffic Psychology and Behaviour*, Vol. 62, pp. 587-598, <https://doi.org/10.1016/j.trf.2019.02.014>.
- 69 Ibid.
- 70 A. Gauthier (2022), "Cycling's gender gap: Breaking the cycle of inequality", ITDP, 6 July, <https://www.itdp.org/2022/07/06/cyclings-gender-gap>.
- 71 Ibid.
- 72 Ibid.
- 73 S. Jaafari (2019), "Saudi cyclist says it takes a 'brave heart' to normalize the sport for women", 27 February, <https://theworld.org/stories/2019-02-27/saudi-cyclist-says-it-takes-brave-heart-normalize-sport-women>.
- 74 F. Bezhan (2019), "Women banned from cycling in bike-friendly Iranian city", <https://www.rferl.org/a/iran-women-banned-cycling-isfahan/29949683.html>.
- 75 R. Goel et al. (2022), "Gender differences in active travel in major cities across the world", *Transportation*, Vol. 50, <https://doi.org/10.1007/s11116-021-10259-4>.

- 76 Ibid.
- 77 Goel et al., op. cit. note 35.
- 78 Ibid.
- 79 Ibid.
- 80 Ibid.
- 81 Ibid.; Goel et al., op. cit. note 75.
- 82 World Health Organization (WHO) (2020), "Cyclist safety: An information resource for decision-makers and practitioners", <https://www.who.int/publications/i/item/cyclist-safety-an-information-resource-for-decision-makers-and-practitioners>.
- 83 UNEP and UN-Habitat, op. cit. note 5.
- 84 J. Egiguren et al. (2021), "Premature mortality of 2050 high bike use scenarios in 17 countries", *Environmental Health Perspectives*, Vol. 129, No. 12, <https://doi.org/10.1289/ehp9073>.
- 85 Ibid.
- 86 National Highway Traffic Safety Administration (2022), "Newly released estimates show traffic fatalities reached a 16-year high in 2021", 17 May, <https://www.nhtsa.gov/press-releases/early-estimate-2021-traffic-fatalities>.
- 87 Egiguren et al., op. cit. note 84.
- 88 Ibid.
- 89 Cherry (2022), "The case for cycling: Tackling climate change", We Are Cycling UK, 8 November, <https://www.cyclinguk.org/briefing/case-cycling-tackling-climate-change>.
- 90 E. Long (2023), "The Environmental Impact of Bikes and E-bikes", Environmental Protection, 13 January, <https://eponline.com/articles/2023/01/13/environmental-impact-of-bikes-and-e-bikes.aspx>.
- 91 SLOCAT Partnership on Sustainable, Low Carbon Transport (2021), "Tracking Trends in a Time of Change: The Need for Radical Action Towards Sustainable Transport Decarbonisation, Transport and Climate Change Global Status Report – 2nd edition", www.tcc-gsr.com.
- 92 C. Brand et al. (2021), "The climate change mitigation impacts of active travel: Evidence from a longitudinal panel study in seven European cities", *Global Environmental Change*, Vol. 67, <https://www.sciencedirect.com/science/article/pii/S0959378021000030>.
- 93 Ibid.
- 94 European Cyclists' Federation (ECF) (2018), "The benefits of cycling: Unlocking their potential for Europe", <https://ecf.com/resources/cycling-facts-and-figures>.
- 95 W. Chen et al. (2022), "Historical patterns and sustainability implications of worldwide bicycle ownership and use", *Communications Earth and Environment*, Vol. 3, No. 171, <https://doi.org/10.1038/s43247-022-00497-4>.
- 96 I. Phillips et al. (2022), "E-bikes and their capability to reduce car CO2 emissions", *Transport Policy*, Vol. 116, pp. 11–23, <https://www.sciencedirect.com/science/article/pii/S0967070X21003401>.
- 97 Ibid.
- 98 Ibid.
- 99 Ibid.
- 100 S. Wrighton and K. Reiter (2016), "CycleLogistics – moving Europe forward!" *Transportation Research Procedia*, Vol. 12, pp. 950–958, <https://www.sciencedirect.com/science/article/pii/S2352146516000478>.
- 101 Brussel Mobiliteit (2023), "Brussels breathes new life with Cairgo Bike", <https://mobilite-mobiliteit.brussels.nl/news/brussel-herademt-met-cairgo-bike>, accessed 10 August 2023; Brussel Mobiliteit (2022), "Shared cargo bikes in Brussels", 28 June, <https://mobilite-mobiliteit-brussels.prezly.com/deelbakfetsen-in-brussel-r4q4z>.
- 102 E. Verlinghieri et al. (2021), "The Promise of Low-Carbon Freight: Benefits of Cargo Bikes in London", Possible, <https://static1.squarespace.com/static/5d30896202a18c0001b49180/t/61091ed-c3acfd2f4af7d97f/1627987694676/The+Promise+of+Low+Carbon+Freight.pdf>.
- 103 M. Sheth et al. (2019), "Measuring delivery route cost trade-offs between electric-assist cargo bicycles and delivery trucks in dense urban areas", *European Transport Research Review*, Vol. 11, <https://doi.org/10.1186/s12544-019-0349-5>.
- 104 M. Sutton (2021), "Business warm up to electric cargo bikes as 90% cost savings realized", *Cycling Industry News*, 16 July, <https://cyclingindustry.news/electric-cargo-bikes>.
- 105 FedEx (2021), "FedEx Express continues journey towards zero emissions delivery, as Edinburgh, Glasgow and Cambridge become the next UK cities to welcome e-cargo bikes", 2 December, <https://newsroom.fedex.com/newsroom/europe-english/fedex-express-continues-journey-towards-zero-emissions-delivery-as-edinburgh-glasgow-and-cambridge-become-the-next-uk-cities-to-welcome-e-cargo-bikes>.
- 106 J. Schünemann et al. (2022), "Life cycle assessment on electric cargo bikes for the use-case of urban freight transportation in Ghana", *Procedia CIRP*, Vol. 105, pp. 721–726, <https://www.sciencedirect.com/science/article/pii/S2212827122001214>.
- 107 L. Pearson et al. (2023), "Adults' self-reported barriers and enablers to riding a bike for transport: A systematic review", *Transport Reviews*, Vol. 43, No. 3, pp. 356–384, <https://doi.org/10.1080/01441647.2022.2113570>.
- 108 R. Mora et al. (2021), "Equity and accessibility of cycling infrastructure: An analysis of Santiago de Chile", *Journal of Transport Geography*, Vol. 91, <https://www.sciencedirect.com/science/article/pii/S096669232100017X>.
- 109 D. Taylor Reich (2022), "Protected Bicycle Lanes Protect the Climate: Measuring How Networks of Protected Bicycle Lanes Reduce Carbon Emissions, Transport Costs, and Premature Death", ITDP, <https://www.itdp.org/wp-content/uploads/2022/10/CC-EMBARGOED-OCT192023.pdf>.
- 110 Pearson et al., op. cit. note 107.
- 111 A.P. Tambapi et al. (2021), "Bicycle ownership and utilization in Tamale Metropolis; influencing factors and impacts to sustainable transport", *Heliyon*, Vol. 7, No. 6, p. e07133, <https://doi.org/10.1016/j.heliyon.2021.e07133>.
- 112 C.J. Mendiata et al. (2020), "Identifying clusters of cycling commuters and travel patterns: The case of Quelimane, Mozambique", *International Journal of Sustainable Transportation*, <https://doi.org/10.1080/15568318.2020.1774947>.
- 113 Mendiata et al., op. cit. note 57.
- 114 ITDP (2021), "Rwanda", <https://africa.itdp.org/where-we-work/rwanda/>; C. Mimano, M. Kinyua and C. Kost (2022), "Transit-oriented development as an anchor to compact, equitable, and accessible African cities", SLOCAT Partnership, <https://slocat.net/transit-oriented-development-as-an-anchor-to-compact-equitable-and-accessible-african-cities>.
- 115 Urban Systems (2022), "Cycling Safety Study", City of Vancouver, <https://vancouver.ca/files/cov/cycling-safety-study-final-report.pdf>.
- 116 J. Uttley et al. (2020), "Road lighting density and brightness linked with increased cycling rates after-dark", *PLOS ONE*, Vol. 15, No. 5, p. e0233105, <https://doi.org/10.1371/journal.pone.0233105>.
- 117 N. Boyon and R. Grimm (2022), "52% globally say cycling in their area is too dangerous", Ipsos, 24 May, <https://www.ipsos.com/en/global-advisor-cycling-across-the-world-2022>.
- 118 F. Küster et al. (2022), "The state of national cycling strategies in Europe (2022)", ECF, https://ecf.com/system/files/The_state_of_national_cycling_strategies_second_edition_2022.pdf.
- 119 F. Küster (2022), "National cycling strategies are growing in prominence but there is still long way to go", ECF, 22 December, <https://ecf.com/news-and-events/news/national-cycling-strategies-are-growing-prominence-there-still-long-way-go>.
- 120 ECF (2023), "National Cycling Policies – The Netherlands", <https://ecf.com/policy-areas/cycling-all-policies/national-cycling-policies>, accessed 30 June 2023; Netherlands Ministry of Infrastructure and Water Management (2022), "National Vision for the Future Bicycle – The power of the bicycle fully utilized!" <https://open.overheid.nl/documenten/ronl-c7e81e32154ccb96643ac477e-562518c37d24dea/pdf>.
- 121 Fietsersbond (2022), "Ruim 1,1 miljard euro voor fietsinfrastructuur", 14 November, <https://www.fietsersbond.nl/nieuws/ruim-miljard-voor-fietsinfrastructuur>.
- 122 ECF (2023), "National Cycling Policies – Germany", <https://ecf.com/policy-areas/cycling-all-policies/national-cycling-policies>, accessed 30 June 2023.
- 123 C. Nijhuis (2021) "Germany plans to double cycling within ten years", *Clean Energy Wire*, 12 March, <https://www.cleanenergywire.org/news/germany-plans-double-cycling-within-ten-years>.
- 124 International Climate Initiative (2023), "Electric Cargo Bikes 'Made in Ghana' – Contributing to the Transformation of Ghana's Transportation", <https://www.international-climate-initiative.com/en/project/electric-cargo-bikes-made-in-ghana-contributing-to-the-transformation-of-ghanas-transportation-img2020-i-005-gha-cargo-e-bikes-made-in-ghana>.
- 125 ECF (2023), "National Cycling Policies – Finland", <https://ecf.com/policy-areas/cycling-all-policies/national-cycling-policies>, accessed 30 June 2023.
- 126 ITDP India (2022), "The Dawn of a Cycling Revolution", <https://smartnet.niua.org/indiacyclechallenge/wp-content/uploads/2022/01/A-Dawn-of-a-Cycling-Revolution-Publication.pdf>.
- 127 Ibid.
- 128 Government of Canada (2022), "Active Transportation Fund", <https://www.infrastructure.gc.ca/trans/active-actif-eng.html>.
- 129 EUROCLIMA+ (2022), "Promoting active mobility with a gender-differentiated approach in Colombia", 22 March, <https://www.euroclima.org/en/recent-events-urban/articles-and-interviews/1605-promoting-active-mobility-with-a-gender-differentiated-approach-in-colombia>.
- 130 Ministerio de Transporte de Colombia (2022), "Ministerio de Transporte presenta la Estrategia Nacional de Movilidad Activa para promover modos de transporte donde el desplazamiento depende de la energía de las personas", <https://www.mintransporte.gov.co/publicaciones/11052/ministerio-de-transporte-presenta-la-estrategia-nacional-de-movilidad-activa-para-promover-modos-de-transporte-donde-el-desplazamiento-depende-de-la-energia-de-las-personas>.
- 131 Transport Projects Wellington City Council (2023), "Bike Network Documents", <https://www.transportprojects.org.nz/current/bikenetowork/background-documents>, accessed 10 March 2023.
- 132 ECF (2023), "COVID-19 Cycling Measures Tracker", <https://ecf.com/dashboard>, accessed 21 January 2023.
- 133 Ibid., accessed 30 June.
- 134 Buehler and Pucher, op. cit. note 6; WHO (2022), "Walking and Cycling: Latest Evidence to Support Policy-making and Practice", <https://www.who.int/europe/publications/i/item/9789289057882>.
- 135 MCC Berlin (2021), "Corona crisis lesson: Additional bike lanes induce large increases in cycling", 30 March, <https://www.mcc-berlin.net/en/news/information/information-detail/article/corona-crisis-lesson-additional-bike-lanes-induce-large-increases-in-cycling.html>.
- 136 Ibid.
- 137 H. Grabar (2023), "How Paris kicked out the cars", *Slate*, 30 March, <https://slate.com/business/2023/03/paris-car-ban-bikes-cycling-history-france.html>.
- 138 Ibid.

- 139 Google (2023), "Environmental Insights Explorer", <https://insights.sustainability.google>, accessed 23 May 2023.
- 140 ECF, op. cit. note 132.
- 141 X. Wen (2023), "Beijing improves conditions for cyclists", *ChinaDaily HK*, 8 February, <https://www.chinadailyhk.com/article/314019#Beijing-improves-conditions-for-cyclists>.
- 142 Ibid.
- 143 J.P. Ibañez (2021), "Completed bike lanes approaching 500-km mark", *Business World*, 12 July, <https://www.bworldonline.com/economy/2021/07/12/381943/completed-bike-lanes-approaching-500-km-mark>.
- 144 R.M. Nugraha and P.G. Bhwana (2022), "309 KM of Jakarta bike lanes established before 2022 ends", *Tempo*, 31 August, <https://en.tempo.co/read/1628899/309-km-of-jakarta-bike-lanes-established-before-2022-ends>.
- 145 ITDP India, op. cit. note 126.
- 146 K. Iassinovskaia (2021), "How pandemic bike lanes made some Canadian cities more accessible", *CBC News*, 18 March, <https://www.cbc.ca/news/science/pandemic-bike-lanes-canada-1.5951863>. <https://www.cbc.ca/news/science/author/katia-iasinovskaia-1.5951928>
- 147 B. Lin et al. (2021), "The impact of COVID-19 cycling infrastructure on low-stress cycling accessibility: A case study in the City of Toronto", *Findings*, <https://doi.org/10.32866/001c.19069>.
- 148 C. MilNeil and G. White (2022), "Mayor Wu announces major expansion of Boston's bike network", *StreetsBlogMass*, 6 September, <https://mass.streetsblog.org/2022/09/06/mayor-wu-plans-announcement-on-bostons-bike-network>.
- 149 Ibid.
- 150 City of Fayetteville (2023), "Active Transportation Plan", <https://www.fayetteville-ar.gov/Document-Center/View/28276/Active-Transportation-Plan---Update---2623-FINAL>.
- 151 City of Wollongong (2023), "Wollongong Cycling Strategy 2030", https://wollongong.nsw.gov.au/_data/assets/pdf_file/0022/120586/Wollongong-Cycling-Strategy-2030.pdf.
- 152 Ibid.
- 153 Gran Fondo Guide (2023), "Khaled bin Mohamed bin Zayed attends inaugural Bike Abu Dhabi Festival", <https://www.granfondoguide.com/Contents/Index/6977/khaled-bin-mohamed-bin-zayed-attends-inaugural-bike-abu-dhabi-festival>, accessed 30 June 2023; Bike Abu Dhabi (2023), "Helping Abu Dhabi's cycling community to thrive", <https://www.bike.abudhabi>, accessed 23 February 2023.
- 154 L. Jaitman (2015), "Urban infrastructure in Latin America and the Caribbean: Public policy priorities", *Latin American Economic Review*, Vol. 24, pp. 1-57, <https://doi.org/10.1007/s40503-015-0027-5>.
- 155 L.J. Sibilski and F. Targa (2019), "Latin America's urban cycling culture: A model for other regions?" *Transport for Development*, 25 October, <https://blogs.worldbank.org/transport/latin-americas-urban-cycling-culture-model-other-regions>.
- 156 H. Ohlund et al. (2022), "Building emergent cycling infrastructure during the COVID-19 pandemic: The case of Zapopan", *Frontiers in Sustainable Cities*, Vol. 4, <https://doi.org/10.3389/frsc.2022.805125>.
- 157 WHO (2020), "Ciclovías Temporales, Bogotá, Colombia", 28 October, <https://www.who.int/news-room/feature-stories/detail/ciclov%C3%ADas-temporales-bogot%C3%A1-columbia>; L. Gellweiler (2022), "Cycling infrastructure in cities: Bogotá's ambitious bicycle network expansion", *Transformative Urban Mobility Initiative*, 14 June, <https://transformative-mobility.org/cycling-infrastructure-in-cities-bogotas-ambitious-bicycle-network-expansion>.
- 158 Gellweiler, op. cit. note 157.
- 159 Gobierno de la Ciudad de Mexico (2022), "Duplicamos el número de ciclovías", 26 September, <https://gobierno.cdmx.gob.mx/noticias/duplicamos-el-numero-de-ciclovias>.
- 160 El Financiero (2019), "CDMX planea tener una red de ciclovías de 600 kilómetros", <https://www.elfinanciero.com.mx/nacional/cdmx-planea-tener-una-red-de-ciclovias-de-600-kilometros>; S. Navarrete (2022), "Rodrigo Díaz: La CDMX tiene todo para ser una capital ciclista", *Expansión Política*, <https://politica.expansion.mx/cdmx/2022/07/05/nuevas-ecobici-cdmx-capital-ciclista-rodrigo-diaz-entrevista>.
- 161 C40Cities (2022), "Sustainable mobility for a carbon neutral, resilient and inclusive Buenos Aires", <https://www.c40.org/case-studies/sustainable-mobility-buenos-aires>.
- 162 D. Broom (2021), "This is how Buenos Aires plans to achieve 1 million bike rides a day", *World Economic Forum*, 11 January, <https://www.weforum.org/agenda/2021/01/buenos-aires-argentina-cycle-lanes-pollution>.
- 163 Gobierno de la Ciudad de Buenos Aires (2023), "Alcanzar 300 km de ciclovías y 1.000.000 de viajes diarios en bici", <https://buenosaires.gob.ar/compromisos/alcanzar-300-km-de-ciclovias-y-1000000-de-viajes-diaros-en-bici>, accessed February 2023.
- 164 J. Johnson (2023), "Buenos Aires is making progress on its bicycle network, but more needs to be done", *Momentum Magazine*, 21 April, <https://momentummag.com/buenos-aires-is-making-progress-on-its-bicycle-network-but-more-needs-to-be-done>.
- 165 Ohlund et al., op. cit. note 156.
- 166 Ibid.
- 167 Ibid.
- 168 United Nations (2023), "World Bicycle Day, June 3", <https://www.un.org/en/observances/bicycle-day>.
- 169 United Nations (2022), "Integration of mainstream bicycling into public transportation systems for sustainable development: draft resolution / Armenia, Bahrain, Burundi, Jordan, Morocco, Philippines, Qatar, Tajikistan, Turkmenistan, Uzbekistan and Viet Nam", <https://digitallibrary.un.org/record/3956443?ln=en#record-files-collapse-header>.
- 170 Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (2021), "Pan-European Master Plan for Cycling Promotion", https://thepep.unece.org/sites/default/files/2021-06/MASTERPLAN_2021-05-20-IL_BF%25203%2520June_0.pdf.
- 171 Ibid.
- 172 M. Brennan (2023), "European Parliament: Create a European Cycling Strategy!" *ECF*, 16 February, <https://ecf.com/news-and-events/news/european-parliament-calls-double-cycling-europe-2030>.
- 173 European Parliament, op. cit. note 2.
- 174 SLOCAT analysis based on GIZ and SLOCAT (2023), "Tracker of Climate Strategies for Transport", <https://changing-transport.org/tracker-expert>.
- 175 Ibid.
- 176 Ibid.
- 177 Ibid.
- 178 UN Climate Change Conference UK 2021 (2021), "COP26 Declaration on Accelerating the Transition to 100% Zero Emission Cars and Vans", 11 November, <https://web.archive.nationalarchives.gov.uk/ukgwa/20230313122615/https://ukcop26.org/cop26-declaration-on-accelerating-the-transition-to-100-zero-emission-cars-and-vans>.
- 179 The Climate Group (2021), "COP26 declaration on accelerating the transition to 100% zero emission cars and vans", <https://cop26transportdeclaration.org>.
- 180 UNEP (2021), "Africa network for walking & cycling - Terms of Reference", 14 September, <https://www.unep.org/resources/policy-and-strategy/africa-network-walking-cycling-terms-reference>.
- 181 T. Delrive (2021), "COP26: Pro-cycling campaign backed by coalition of 350 organisations helps achieve recognition of active travel in COP26 transport declaration", *ECF*, 15 November, <https://ecf.com/news-and-events/news/cop26-pro-cycling-campaign-backed-coalition-350-organisations-helps-achieve>.
- 182 The Climate Group, op. cit. note 179.
- 183 M. Brennan (2022), "Report from COP27: Walking and cycling must play a greater role in decarbonising transport, according to over 400 organisations", *ECF*, 23 November, <https://ecf.com/news-and-events/news/report-cop27-walking-and-cycling-must-play-greater-role-decarbonising-transport>.
- 184 ITDP (2022), "Pedaling on: Celebrating one year of ITDP's Cycling Cities Campaign", 9 November, <https://www.itdp.org/2022/11/09/one-year-of-itdp-cycling-cities>.
- 185 Union Cycliste Internationale (UCI) (2021), "UCI launches new sustainability guidelines and targets on World Bicycle Day", 3 June, <https://www.uci.org/article/uci-launches-new-sustainability-guidelines-and-targets-on-world-bicycle-day/5QjINKZ-c47uncUGjFab5or>.
- 186 UCI (2023), "UCI Climate Action Charter", <https://www.uci.org/uci-climate-action-charter/4InrJ3kdT-JobJaDhox0J0>, accessed 30 June 2023.
- 187 UCI (2015), "UCI-funded research demonstrates that a switch from motorised vehicles to cycling would help confront these issues, while generating infrastructure savings of up to \$25 trillion by 2050", 15 November, <https://www.uci.org/article/uci-co-funded-research-quantifies-potential-savings-of-a-worldwide-cycling-culture--173390/7HL-bYok5CdKmfSeHCu3X2>.
- 188 Global Designing Cities Initiative (2023), "Bloomberg Initiative for Cycling Infrastructure", *BICI*, <https://globaldesigningcities.org/bici>, accessed 19 January 2023.
- 189 ECF (2023), "About us", <https://ecf.com/about-us>, accessed 30 June 2023.

This report should be cited as:

SLOCAT (2023), Global Status Report on Transport, Climate and Sustainability - 3rd edition, www.tcc-gsr.com.

Data access and licensing:

Attribution 4.0 International (CC BY 4.0) Share — copy and redistribute the material in any medium or format. Adapt — remix, transform and build upon the material for any purpose. Attribution — you must give appropriate credit, provide a link to the licence and indicate if changes were made.



The development of this report was led by Maruxa Cardama, Angel Cortez, Emily Hosek, Agustina Krapp, Nikola Medimorec and Alice Yiu from the SLOCAT secretariat. Our warm thanks to the many SLOCAT partners and experts from the wider transport community who have shaped this report. A significant share of the research for this report was conducted on a voluntary basis.

For a full list of acknowledgements, please visit the online page [here](#).

www.tcc-gsr.com | #TransportClimateStatus



Transport, Climate and Sustainability
Global Status Report - 3rd edition

